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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,558	10/09/2001	John C. Lynk	14426ROUS01U	7814

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EXAMINER	
LIN, KENNY S	

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/973,558	LYNK ET AL.	
	Examiner	Art Unit	
	Kenny Lin	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22 and 24-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22, 24-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-22 and 24-28 are presented for examination. Claim 23 is not presented in the disclosure.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 8, 10-12, 14, 16-21, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitchaikani et al (Pitchaikani), US 6,061,505, in view of Schenkel et al (Schenkel), US 5,933,416.

4. Pitchaikani and Schenkel were cited in the previous office action.

5. As per claims 1 and 17, Pitchaikani taught the invention substantially as claimed including a processing apparatus arranged to be coupled to a network of nodes linked together by physical connections (col.4, lines 15-24), the processing apparatus comprising:

a. A receiver that operates to receive at least one logical connection parameter associated with each of at least one port within a plurality of the nodes (col.2, lines 25-27, 31-38, 40-50, col.4, lines 28-32, 43-48); and

b. A processor, coupled to the receiver, that operates to process the received logical connection parameters (col.4, lines 57-65).

6. Pitchaikani did not specifically teach that the logical connection parameters are processed in order to predict at least one physical connection between two of the ports within the plurality of nodes based upon the results of the processing. Schenkel taught that various measures of similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Pitchaikani and Schenkel because Schenkel's teaching of processing to measure similarity in the parameters to determine communication path coupling enables Pitchanikani's system to determine a suitable physical connection between two similar ports (col.2, lines 7-14).

7. As per claim 18, Pitchaikani taught the invention substantially as claimed including a method of predicting at least one physical connection within a network of nods linked together by physical connections (col.4, lines 15-24), the method comprising:

a. Receiving at least one logical connection parameter associated with each of at least one port within a plurality of the nodes (col.2, lines 25-27, 31-38, 40-50, col.4, lines 28-32, 43-48);

b. Processing the received logical connection parameters (col.4, lines 57-65).

8. Pitchaikani did not specifically teach to predict at least one physical connection between two of the ports within the plurality of nodes based upon the results of the processing. Schenkel taught that various measures of similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Pitchaikani and Schenkel because Schenkel's teaching of processing to measure similarity in the parameters to determine communication path coupling enables Pitchanikani's system to determine a suitable physical connection between two similar ports (col.2, lines 7-14).

9. As per claim 26, a network comprising:

a. A plurality of nodes linked together by physical connections (col.4, lines 15-24);

b. At least one processing apparatus arranged to be coupled to the nodes, the processing apparatus operating to received at least one logical connection parameter associated with each of at least one port within a plurality of the nodes (col.2, lines 25-27, 31-38, 40-50, col.4, lines 15-24, 28-32, 43-48; station 120); and process the received logical connection parameters (col.4, lines 57-65).

10. Pitchaikani did not specifically teach that the logical connection parameters are processed in order to predict at least one physical connection between two of the ports within the plurality of nodes based upon the results of the processing. Schenkel taught that various measures of similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12). It would have been obvious to one of ordinary skill in the art at

the time the invention was made to combine the teaching of Pitchaikani and Schenkel because Schenkel's teaching of processing to measure similarity in the parameters to determine communication path coupling enables Pitchanikani's system to determine a suitable physical connection between two similar ports (col.2, lines 7-14).

11. As per claims 2 and 19, Pitchaikani and Schenkel taught the invention substantially as claimed in claims 1 and 18. Schenkel further taught to process the received logical connection parameters, the processor operates to, for a first one of the two ports, determine at least one most probable port that the first port is physically connected to, this most probable port being the second of the two ports (col.2, lines 7-9, col.5, lines 1-26).

12. As per claims 3 and 20, Pitchaikani and Schenkel taught the invention substantially as claimed in claims 1 and 18. Schenkel further taught to process the received logical connection parameters, the processor operates to, for a first one of the two ports, determine a set of most probable ports that the first port is physically connected to, this set of most probable ports including the second of the two ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

13. As per claims 4 and 21, Pitchaikani and Schenkel taught the invention substantially as claimed in claims 3 and 20. Schenkel further taught to determine a set of most probable ports that the first port is physically connected to, the processor operates to determine a port similarity variable for a plurality of the ports when compared to the first port; and insert all ports that were

determined to have the largest port similarity variable within the set of most probable ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

14. As per claim 5, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 3. Schenkel further taught that the port similarity variable for each of the ports when compared to the first port is equal to the number of logical connections that are identical between the first port and the particular port that the port similarity variable is being determined for (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

15. As per claim 8, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 1. Pitchaikani further taught that if there are a plurality of logical connection parameters associated with each of the at least one ports, the processor selects one or more of the plurality of logical connection parameters to predict the at least one physical connection (col.4, lines 57-65).

16. As per claim 10, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 1. Schenkel further taught to predict at least one physical connection between two of the ports within the plurality of nodes, the processor operates to predict physical connections between a plurality of pairs of the plurality of nodes based upon the results of the processing (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

17. As per claim 11, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 1. Pitchaikani further taught that the at least one logical connection parameter

associated with each of at least one port within a plurality of the nodes comprises logical channel information (col.2, lines 25-27, 31-38, 40-50).

18. As per claims 12 and 24, Pitchaikani and Schenkel taught the invention substantially as claimed in claims 1 and 18. Pitchaikani further taught that the at least one logical connection parameter associated with each of at least one port within a plurality of the nodes comprises a user label (Table 1).

19. As per claims 14 and 25, Pitchaikani and Schenkel taught the invention substantially as claimed in claims 1 and 18. Schenkel further taught the processor predicts at least one physical connection between two of the ports within the plurality of nodes based upon the results of the processing and based upon known physical connection information with respect to the network (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18).

20. As per claims 16 and 27, Pitchaikani and Schenkel taught the invention substantially as claimed in claims 1 and 26. Pitchaikani further taught to receive at least one logical connection parameter associated with each of at least one port within a plurality of the nodes, the receiver operates to receive stored information from a database (col.5, lines 6-25).

21. Claims 6-7, 9, 13, 15, 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pitchaikani and Schenkel as applied to claims 1-5, 8, 10-12, 14, 16-21 and 24-27 above, and further in view of "Official Notice".

22. As per claims 6, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 1. Schenkel further taught to process the received logical connection parameters, for a first one of the two ports, determine a set of most probable ports that the first port is physically connected to, this set of most probable ports including the second of the two ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18). Pitchaikani and Schenkel did not specifically taught to sort the ports within the plurality of nodes based upon the number of logical connections at the ports. However, it is obvious to sort ports to place the ports in specific order. Official Notice is taken that the concept and advantage of sorting is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and further sort the ports in a preferable order to enable easy search and reading of the information.

23. As per claim 7, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 6. Schenkel further taught to determine a set of most probable ports that the first port is physically connected to, the processor operates to determine a port similarity variable for a plurality of the ports when compared to the first port; and insert all ports that were determined to have the largest port similarity variable within the set of most probable ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18). Pitchaikani and Schenkel did not specifically teach the processor to start operating with the port with the largest number of logical connections and proceeding until a subsequent port would have a number of logical connections less than the largest port similarity variable already determined. However, it is obvious to place the ports in a

specific order for operation. Official Notice is taken that the limitations narrowed by these claims are consider obvious and furthermore a matter of design choice. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and further placing the ports in a specific order of one's desire for operation in Pitchaikani and Schenkel's system.

24. As per claim 9, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 8. Pitchaikani and Schenkel did not specifically teach that the selecting is performed with a graphical user interface integral to said processor. However, Official Notice is taken that the concept and advantage of using a graphical user interface for controlling processors is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and further provide a GUI for the users of Pitchaikani and Schenkel to control and select the preferred parameters for operation.

25. As per claim 13, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 3. Pitchaikani and Schenkel did not specifically teach that if multiple ports are included within the set of most probable ports, a span address associated with each port is used to determine the port with which there is a physical connection. However, Pitchaikani taught to use identifiers to determine the ports (Table 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and

Schenkel and also use span address as identifiers to determine the ports with physical connections from the physical connection information received (Pitchaikani, col.2, lines 39-50).

26. As per claim 15, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 14. Pitchaikani and Schenkel did not specifically teach that the known physically connection information comprises information generated within an auto discovery procedure. However, it is obvious to include various types of information in the physical connection information. Official Notice it taken that the limitations narrowed by these claims are consider obvious and furthermore a matter of design choice. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and further include all useful information in the physical connection information valuable to the users of Pitchaikani and Schenkel's system.

27. As per claim 22, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 18. the processing step comprises: for a first one of two ports, determining a port similarity variable for a plurality of the ports when compared to the first port; and inserting all ports that were determined to have the largest port similarly variable within a set of most probable ports that the first port is physically connected to, this set of most probable ports including the second of the two ports (col.2, lines 7-9, col.5, lines 1-26, col.9, lines 12-18). Pitchaikani and Schenkel did not specifically taught to sort the ports within the plurality of nodes based upon the number of logical connections at the ports and start operating with the port with the largest number of logical connections and proceeding until a subsequent port would have a

number of logical connections less than the largest port similarity variable already determined. However, it is obvious to sort ports to place the ports in specific order for operation. Official Notice is taken that the concept and advantage of sorting is well known and expected in the art. Official Notice is taken that the limitations narrowed by these claims are consider obvious and furthermore a matter of design choice. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and further placing the ports in a specific order of one's desire using sorting methods for operation in Pitchaikani and Schenkel's system.

28. As per claim 28, Pitchaikani and Schenkel taught the invention substantially as claimed in claim 26. Pitchaikani and Schenkel did not specifically teach that the network is an optical network. However, Official Notice is taken that it would have been obvious to apply the teaching of Pitchaikani and Schenkel to all compatible networks. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Pitchaikani and Schenkel and further implement such teachings to all compatible networks including optical network.

Response to Arguments

29. Applicant's arguments filed 7/27/2005 have been fully considered but they are not persuasive.

30. In the remark, applicant argued that (1) Pitchaikani does not disclose or teach a method or apparatus to predict the topology of a network, nor does it teach the logical data parameters that would be needed to predict a topology in the absence of stable traffic monitoring data. (2) Schenkel teaches away from the claimed invention by requiring a stable traffic monitoring data flow to predict the network topology and logical connection parameters needed in the present invention to predict the network topology are not disclosed nor taught in Schenkel. (3) Pitchaikani does not disclose the logical connection parameters used in the present invention to predict the network and Schenkel does not teach how to predict the topology of a network in the absence of data traffic monitoring.

31. Examiner traverse the argument:

As to point (1), Pitchaikani clearly disclosed to transmit logical connectivity records to a requesting connectivity derivation unit (col.2, lines 25-27, 31-38, 40-50, col.4, lines 28-32, 43-48, 57-65). Since logical connection parameter is not defined in the claims, Pitchaikani clearly reads on the claimed language of "a processing apparatus arranged to be coupled to a network of nodes linked together by physical connections (col.4, lines 15-24), the processing apparatus comprising: a receiver that operates to receive at least one logical connection parameter associated with each of at least one port within a plurality of the nodes (col.2, lines 25-27, 31-38, 40-50, col.4, lines 28-32, 43-48); and a processor, coupled to the receiver, that operates to process the received logical connection parameters (col.4, lines 57-65)". Pitchaikani did not specifically teach that the logical connection parameters are processed in order to predict at least one physical connection between two of the ports within the plurality of nodes based upon the

results of the processing. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As to point (2), Schenkel taught that various measures (e.g. logical connection parameters) of similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12). This reads on the claim language of "process the received logical connection parameters in order to predict at least one physical connection between two of the ports within the plurality of nodes based upon the results of the processing". Furthermore, Schenkel does not teach away from the invention since the claim does not define that the invention does not require a stable traffic monitoring data flow nor that the logical connection parameters are differ from the measurement taught by Schenkel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Pitchaikani and Schenkel because Schenkel's teaching of processing to measure similarity in the parameters to determine communication path coupling enables Pitchanikani's system to determine a suitable physical connection between two similar ports (col.2, lines 7-14). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., current invention provides a means of predicting network topology, even when traffic monitoring data is not available or unstable; prediction mechanism does not rely on stable traffic monitoring data; logical connection parameter include information such as the channel within the payload that the CTP is

associated based upon the well-known JKLM indexing scheme, port user labels and span IP addresses) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As to point (3), Pitchaikani did not specifically teach that the logical connection parameters are processed in order to predict at least one physical connection between two of the ports within the plurality of nodes based upon the results of the processing. However, Schenkel taught that various measures (e.g. logical connection parameters) of similarity can be used to determine the communication path coupling (col.2, lines 7-9, col.3, lines 66-67, col.4, lines 1-12). Since the claim does not define the logical connection parameters or that the invention does not require a stable traffic monitoring data flow, Pitchaikani and Schenkel in combination, read on the claims. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Pitchaikani and Schenkel because Schenkel's teaching of processing to measure similarity in the parameters to determine communication path coupling enables Pitchanikani's system to determine a suitable physical connection between two similar ports (col.2, lines 7-14).

Because Applicants have failed to challenge any of the Examiner's "Official Notices" stated in the previous office action in a proper and reasonably manner, they are now considered as admitted prior art. See MPEP 2144.03

Conclusion

32. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl
August 18, 2005

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